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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Harri Holma

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05/31/2006

BANNER & WITCOFF

1001 G STREET N W

SUITE 1100

WASHINGTON, DC 20001

EXAMINER

BURD, KEVIN MICHAEL

ART UNIT

PAPER NUMBER

2611

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/089,145	Applicant(s) HOLMA, HARRI	
	Examiner Kevin M. Burd	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-32 and 35-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-32, 35-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. This office action, in response to the amendment filed 3/20/2006, is a non-final office action.

Response to Arguments

2. The previous objections to the drawings, abstract and claims are withdrawn,
3. Applicant's arguments with respect to claims 15-32 have been considered but are moot in view of the new ground of rejection. New claims 35-40 are rejected below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 15-32 and 35-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teder et al (US 5,544,156) in view of Popovic (US 6,292,519).

Regarding claims 15, 23, 24 and 40, Teder discloses a method of estimating spreading factors in a CDMA system. The system comprises a transmitter and receiver. The transmitter transmits data over a data channel and control information over a control channel (column 2, lines 43-49). The data is transmitted in parallel to the control information (column 2, lines 43-49). The data is spread according to a spreading factor (column 3, lines 60-64). The control information is decoded and the control information contains power control commands for the corresponding data frame (column 4, lines 15-

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19). The spreading factor is known and transmitted in the PCCH channel (column 3, lines 57-64). The control information is protected by a powerful encoding scheme to minimize errors to the important control information such as power and spreading factor (column 5, lines 32-39). Once the spreading factor is recovered, the correct spreading code is used to recover the data (column 4, lines 15-19 and column 5, lines 32-39). Teder further discloses interference can be reduced for various users of the system since the chip rate is kept constant and a lower bit rate gives a higher spreading factor, thus allowing a lower transmit power. Those skilled in the art will readily appreciate how this ability to vary the information rate in a CDMA system can be used advantageously to vary other parameters (column 3, line 66 to column 4, line 5). Teder also states in a CDMA system with variable bit rates and spreading factors, it would become complicated to introduce pilot symbols interleaved with the data sequences (column 2, lines 26-29). Therefore, Teder acknowledges CDMA systems contain variable bit rates and spreading factors. Teder does not disclose using the variable spreading factors. Popovic discloses a method of estimating a spreading factor in a CDMA transmission system. The data energy of the received symbols sampled by the receiver is measured (column 9, lines 36-43) as is the interference power. The SIR value is corrected according to the received power values (column 9, lines 49-58). The SIR values are corrected by changing the measured spreading factor to a new spreading factor (column 8, lines 39-47). Figure 7A shows the measured SIR without correction for a spreading factor of 128. Figure 7B shows the measured SIR values with correction. The correction is shown in the table of column 9 where the spreading factor is changed from

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128 to 16. It is advantageous to allow the spreading factor to be changed according to the received power measurements to increase the signal-to-interference ratio so data can be received with fewer errors. For this reason, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine the communication system of Popovic into the system and method of using the system of Teder.

Regarding claim 16 and 33, Teder discloses considering interleaving the control information and the data (column 2, lines 27-29).

Regarding claims 17, 18 and 34. The data to be transmitted comprise a plurality of frames. The "data unit" can be one, many or all of these frames.

Regarding claims 19, 26-28, the spreading factor used to decode the frame will be the appropriate spreading factor for each specific frame transmitted. This spreading factor can be the lowest spreading factor.

Regarding claims 20, 29-32, the relationship between the spreading factor, bit rate and transmit power is known (column 4, lines 1-5).

Regarding claim 21, as stated above, once the spreading factor is recovered from the control information, the data frame is despread using the spreading factor (column 4, lines 20-59).

Regarding claim 22, the CDMA system accommodates a plurality of users.

Regarding claim 25, a receiver is disclosed in Teder.

Regarding claims 35-37, the combination discloses the initial portion of the signal is decoded according to a spreading factor, the measured SIR value is corrected and the signal is recovered using the corrected spreading factor.

Regarding claims 38 and 39, communication takes place between a base station and a mobile station.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Friday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin M. Burd
5/28/2006


KEVIN BURD
PRIMARY EXAMINER